

WHAT IS CLAIMED IS:

1. A high-capacity hydrogen storage alloy comprising a crystal structure containing a body-centered cubic structure as a single or main phase and made of a composition represented by a general formula  $Ti_aCr_bMo_c$ :

wherein  $a$  is in a range of from 25 to 45 % by atomic weight,  $b$  is in a range of from 30 to 65 % by atomic weight, and  $c$  is in a range of from 5 to 40 % by atomic weight.

2. A high-capacity hydrogen storage alloy comprising a crystal structure containing a body-centered cubic structure as a single or main phase and made of a composition represented by a general formula  $Ti_aCr_bMo_cFe_d$ :

wherein  $a$  is in a range of from 25 to 45 % by atomic weight,  $b$  is in a range of from 30 to 65 % by atomic weight,  $c$  is in a range of from 5 to 40 % by atomic weight, and  $d$  is not larger than 15 % by atomic weight.

3. A high-capacity hydrogen storage alloy according to claim 1, wherein a treatment that said hydrogen storage alloy is heated at a temperature in a range of from 1,200 to 1,500°C for 1 minute to 24 hours and cooled at a cooling speed not less than the speed of water cooling, has been performed.

4. A method for producing a high-capacity hydrogen storage

alloy, comprising the steps of:

applying a heat treatment to a material made of a composition defined in Claim 1 to thereby heat said material at a temperature in a range of from 1,200 to 1,500°C for 1 minute to 24 hours; and

cooling said material at a cooling speed not less than the speed of water cooling after said heat treatment.